

	SUN	MON	TUES	WED	THURS	FRI	SAT	
WEEK 1				May 23	May 24	May 25	May 26	
8:30 am				Students' arrival at BNL all day Security/Housing (Check into Housing & Begin GUV Center processing if possible) Commence: Training Audit, Obtain BNL Photo IDs & Computer Access Cash Checks at Credit Union (if needed)			FREE TIME	
9:00 am					Continue: Training Audit, etc	NSRL Facility Radiobiology Users Training: 9-10:30am Iris scans and TLDs from 10:30-12 noon (Building 911 Snyder Seminar Room)		
10:00 am					1:00 – 2:00 pm BNL Tour +Grou Photo (Elaine Lowenstein) Start at Med Bld 490			
11:00 am					Continue: Training Audit, etc			
12:00 pm						LUNCH		LUNCH
12:30 pm			NASA Summer School Opening					Complete iris scans and issuing of TLDs (if needed)
2:00 pm						<u>Radiological Worker Classroom Training and Exam: 2-4:30 pm (to be confirmed) Medical Building</u>		
3:00 pm								Elementary Reviews of Physics and Biology (L&D Goodhead, Nelson)
3:30 pm			D.Goodhead, L.Goodhead, K. Buckaloo G. Nelson(?), Arrival at BNL					
5:00 pm						5:30 pm Student Welcome / BBQ – Brookhaven Ctr Patio (Nelson and Buckaloo) Catered		

	SUN	MON	TUES	WED	THURS	FRI	SAT
Week 2	May 27	May 28	May 29	May 30	May 31	June 1	June 2
8:30 am (8:30-9:00)	FREE TIME	Medical Dept. DG/LG/PG/BW Welcome & Program Goals	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	FREE TIME
9:00 am (9:00-10:05)		NASA's Mission & Roadmap (Cucinotta)	Radiobiology 2 (Hall)	Heavy Ions and Shielding Physics, including Neutrons (Heilbronn)	Chromosome Rearrangements (Bedford)	Biology Experiment Overview for 6/4 (Baulch/Guida) & Biology Review (Baulch)	
10:05 am (10:05-11:10)		What is Radiation? (Borak)	PhysicsTool Kit (Nelson)		Mutagenesis (Kronenberg)		
11:10 am		<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	
11:25 am (11:25-12:30)		Radiation Interactions with Matter (Borak)	Physics 5: Chalk Talk/problems	Physics Homework/ problems (Heilbronn/Goodhead)	Radiosensitivity and Cell Cycle (Joiner)	Space Radiation Protection (Schimmerling)	
12:30 pm		<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	
1:30 pm (1:30-2:35)		Introduction to Radiation Dosimetry (Borak)	Radiation Chemistry & DNA Damage (Held)	1:30-3:00 Programmed Cell Death (Kronenberg)	Radiation-induced Instability (Kronenberg)	Epigenetics (Baulch)	
2:35 pm		<i>Break</i>	<i>Break</i>		<i>Break</i>	<i>Break</i>	
2:50 pm (2:50-3:55)		Radiobiology I (Hall, by Goodheads)	Dose responses, LET & RBE (Held)	3:00 <i>Break</i>	Dose Rate Effects (Bedford)	Accelerators (Lowenstein)	
3:55 pm (3:55-5:00)		Principles of Radiation Protection (Borak)	Radiation detection methods (Borak/Heilbronn)	3:15 DNA Repair (Wilson)			
5:00 pm	7:00 pm Evening	Faculty Panel	Faculty Panel	Faculty Panel	Faculty Panel	Faculty Panel	
5:30 pm	Activity with G. Nelson	End	6:00 – 7:30 pm Faculty Reception – Lg Conf Room Catered	End	End	End	

	SUN	MON	TUES	WED	THURS	FRI	SAT	
WEEK 3	June 3	June 4	June 5	June 6	June 7	June 8	June 9	
8:30 am (8:30-9:00)		Medical Dept. Daily Briefing	LAB DAY - NSRL (Baulch & Guida)	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	8:30-11:30 <u>8:30 All start at NSRL</u> <u>First ½ Stay at NSRL</u> for LAB Day - NSRL (Rusek) with Beam Time <u>Second ½ at Medical</u> <u>Toolkit Practical and</u> <u>Beam time Proposal</u> (Nelson)	FREE TIME	
9:00 am (9:00-10:05)		Space Radiation Environment -1 (Patrick O'Neill)	Beam Time 9:00 – 2:00	Animal Studies (Weil)	3D Cell Culture Models (Shay)			
10:00 am (10:05-11.10)		Space Radiation Environment -2 (Patrick O'Neill)		Genetics of Animal Studies (Weil)	Biol Countermeasures For Radiat Protection (Shay)			
11:10 am		<i>Break</i>	<i>Break</i>	<i>Break</i>				
11:25 am (11:25-12:30)		Radiation-Induced Cell Signaling (Boothman)	LAB	Haematopoietic & Immune Response (Nelson)	Microgravity Effects (Nelson)			<i>Lunch</i>
12:30 pm		<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>			Systems Biology Approaches to Radiation Effects (Barcellos-Hoff)
1:30 pm (1:30-2.35)		Accelerator Physics and Space Simulation (Zeitlin)	LAB	Leukemia (Weil)	1:30 – 4:30 pm: LAB In 2 Groups: 1. Flow Cytometry (Guida) 2. DNA Damage, etc. (Kim)			<i>2:00-2:30 Break –</i> <i>Go to NSRL</i>
2:35 pm		<i>Break</i>	<i>Break</i>	<i>Break</i>				2:30-5:00 <u>Second ½ at NSRL</u> For LAB Day - NSRL (Rusek) with Beam Time <u>First ½ at Medical</u> <u>Toolkit Practical and</u> <u>Beam time Proposal</u> (Nelson)
2:50 pm (2.50-3.55)		Space Flight Measurements (Nelson)	LAB	Beam Time Proposals (Nelson) Homework, Questions	Experimental Plan for Tomorrow (Rusek/Guida)			Faculty Panel
3:55 pm (3:55-5:00)		Effects on Embryo, Fetus, Transgenerational (Baulch)	Non-targeted Effects (Azzam)	Acute Effects (Kennedy)				Faculty Panel
5:00 pm		Faculty Panel	Faculty Panel	Faculty Panel		Faculty Panel		
5:30 pm		End	End	End	End	End		

	SUN	MON	TUES	WED	THURS	FRI	SAT
WEEK 4	June 10	June 11	June 12	June 13	June 14	June 15	June 16
8:30 am (8:30-9:00)	FREE TIME	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	DEPARTURE
9:00 am (9:00-10:05)		NSRL Simul(GERMcode) (Cucinotta)	Omics Technologies (Story)	Biomarkers & Biodosimetry (Bill Blakely)	Chemical Kinetics in Systems Biology (Cucinotta)	Review Of Beam Time Proposals	
10:05 am (10:05-11:10)		Track structure Simulations (Plante)	Beam Time Proposals (Faculty Available)	Beam Time Proposals (Faculty Available)	Radiation Quality & Risk Models (Cucinotta)	Review Of Beam Time Proposals	
11:10 am		<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	
11:25 am (11:25-12:30)		Transgenic Models and New Imaging approaches (Kirsch)	Cardiovascular Effects (O'Banion)	Visit to Tandem Van de Graaff (Pending timing)	Cataracts (Ellie Blakely)	Review Of Beam Time Proposals	
12:30 pm		<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	
1:30 pm (1:30-2:35)		Cancer Stem Cells (Kirsch)	CNS Effects (O'Banion)	Review Time (Faculty & Cucinotta)	Heavy Particle Therapy (Ellie Blakely)	Student Team Ppt Presentation	
2:35 pm		<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	
2:50 pm (2:50-3:55)		Track Structure 2 (Goodhead)	Neurogenesis (Fike)	LAB TIME	Prepare Final Presentations. Beam Time Proposals Due	Student Team Ppt Presentation	
3:55 pm (3:55-5:00)		High/Low LET Microbeams (Randers- Pehrson)	Radiation Effects on Neurons & Stem Cells (Fike)	Work On Presentations	Faculty Panel	Closing Ceremony Med Lg Conf Room Catered	
5:00 pm		Faculty Panel	Faculty Panel	7 – 10 PM Dinner Banquet Catered			
5:30 pm	End	End			End	End	